

# COMPUTER SHOPPER<sup>TM</sup>

\$1.95

© 02927

NEW & USED BARGAINS

## TANDY 200 2nd Generation Lap Portable

- More Programs
- Bigger Screen
- New Cursor Cluster
- Many New Features

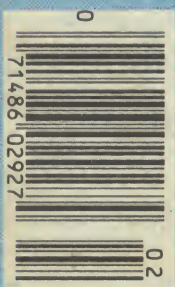


### Inside:

- Letter Quality Printers Re-Defined
- How to Buy and Sell Used Computers
- Tandy Model 1000-PC
- ASCII to WordStar<sup>TM</sup> Conversion Program
- Build This One-Chip Controller to Control Eight Electrical Devices

- New Macintosh Section
- Personal Computers Are 10 Years Old!

A Look Back — by Stan Veit



**19<sub>MB</sub> DISK \$399!**

UNFORMATTED CMI 5619 HARD DRIVE, NEW, 1 YR. WARRANTY  
ORDER NOW PROTO PC INC. (612) 644-4660 SEE AD INDEX

EXTERNAL FLOPPY FOR YOUR **ONLY \$229.50!!** **H&M**  
**apple IIC PORTABLE** Disk Drive Services, Inc.  
See Ad Index

**COMMUNICATIONS ELECTRONICS<sup>TM</sup>** **94¢ Diskettes**  
**800-USA-DISK**  
See ad index

THE WORLD'S LARGEST COMPUTER MAIL ORDER FIRM  
**CONROY-LA POINTE**  
Formerly **Computer Exchange<sup>TM</sup>**  
See Ad Index

**Don't Risk The Unknown**  
Brand Name Diskettes at the Lowest Prices!  
Disk World! See Ad Index!

CALL **MW** **NEED A PRINTER?**  
MidWest Micro-Peripherals  
1-800-423-8215

**SANYO SPECIALS** THE COMPUTER WAREHOUSE  
See Page 9

See Advertisers Index Page 205



# ATARI

## Applying The Atari

by Jeff Brenner

This month we've got an interesting test/study program for students and teachers. We'll also look into January's banner program, reader mail and DOS 3, plus I'll reveal Atari's new address. But first let's see what has been going on in Sunnyvale, CA.

### Atari News

\$119.95—that's the retail price of the Atari 800XL announced by Jack Tramiel in the midst of the holiday buying season. That's quite an unbelievable price (several years ago, a 48K Atari 800 would have cost over ten times the amount) and I would find it even more unbelievable if Atari were actually making money from them.

The Atari people tell us that the price break is the result of

"lower production costs." Maybe, but let's look at the real situation that resulted in the dramatic price change: The data is November 1984. Atari is in debt—it seems like they owe millions to every company in the United States. While these companies are trying to quickly get their money from what they perceive to be a good Chapter 11 candidate, Jack Tramiel and his crew are drowning in unsold Atari 800XLs. So, Tramiel proudly announces his "\$119.95 Atari 800XL" plan (or more accurately, his "quick-cash" plan), Commodore headquarters explodes in confusion and perspiration, and everybody runs out to get the lowest-priced 64K computer on the market.

Atari probably drew away a

significant portion of sales from Commodore over the holiday season, but no one can really be sure. The new price had an even more important effect for Atari in that many retailers who had dropped their line resumed selling Atari products with the irresistible prices. This means that Atari might have a wider distribution network for its newer computers. Incidentally, we'll have complete information on Atari's new units as soon as it becomes available.

### Programming Tips

Every few months I'll be printing a Programming Tips section in which useful hints and ideas sent in by readers will be listed. If you have any programming suggestions or

short, handy programs from which others may benefit, send them in. If your idea is printed, I'll send you a three-dimensional laser-etched hologram sticker. Some of these fascinating stickers were produced under license from Atari when designers were attempting to develop a holographic video game.

### Reader Mail

Please send me some literature pertaining to software for the Atari Home Computer 800. Software programs are limited here in Panama. Therefore, we must rely on computer supplies from companies abroad.

Candida B. Carteret  
Panama—APO Miami

software which they trade or sell at inexpensive prices. Computer Shopper's "Users Groups" section has a generous listing of these groups.

I am trying to translate a short BASIC program into assembly language. My problem is that I cannot figure out how to translate a BASIC line such as "IF A>B THEN GOTO 100." I know I need to use a CMP and a branch statement, but I become confused with the carry bit. Both A and B are less than 256 so there is no need for comparisons greater than one byte. I am relatively new to assembly language, so any help you can give me would be greatly appreciated.

Bill Foster  
Fayetteville, NC

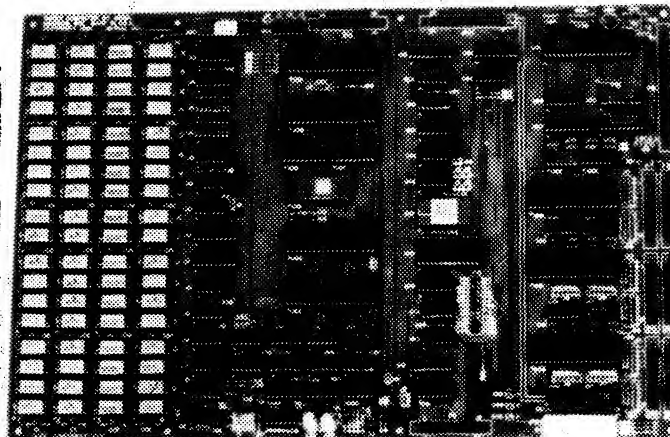
I am sending you a list of some Atari software distributors and manufacturers that sell to the public. Others who want this list should send a self-addressed stamped envelope. Your best bet is to write to these companies and request their catalogs. You also might want to make some contacts with Atari users groups in the United States. Many of these groups have public domain

The CMP operation compares the quantity following the CMP with the value in the accumulator. When one quantity is compared with another, the computer, in effect, subtracts one from the other, although neither quantity is actually changed. The result of this subtraction determines the combination of internal flags

Continued on page 114

## THE BIGGEST & BEST SBC

### The Mega Super Computer



#### The Maxi Computer System on Board

- ★ 512K of D-Ram with Parity-Configurable as 8 Banks of 64K or as a high speed Electronic Disk
- ★ Dual Density 1 or 2 sided Floppy Disk Controller (WD2797-8" or 5" simultaneously - supports 3 drives for 4 MB's of DATA
- ★ Hard Disk Interface, ST506, SASI or Priam
- ★ Six Serial Ports - with hand shaking
- ★ 48 Additional Ports on I/O expander BUS
- ★ Math Chip (9511 or 9512)
- ★ CTC & DMA
- ★ Two Parallel Ports
- ★ Z80B Runs at 4 or 5 MHZ
- ★ RUNS/CPM/MPM and Turbodos

- CP/M 2.2 System 512K, RAM Disk (430K)
- CP/M 3.0 System 512K Bank
- MP/M 2.1 System 384K auto-boot for console (16 users)
- Turbodos 1.3, 128K (see Microsystem, Aug. 84)

#### SPECIAL HALLOWEEN PRICES

Total price for above systems \$1099 — includes operating system and board  
Hard disk 20 megabyte package for all systems above \$1995.

All this on a multi layer card - with accurate documentation.

Bare Board - with documentation & Firmware (PAL) — \$200

Users Manual — \$25

Wave soldered assembled board without IC's — \$375

# MEGACO.

2248 S. Park Street, Madison, WI 53713, (608) 255-7400

## FREE SHIPPING DISKETTES

West Coast "Call"  
1(800) 621-6221

Central & East "Call"  
1(800) 654-4058

Discounts Starting at 3 Box Quantities

3M	Dysan	maxell	Verbatim
• 5 1/4"	• 5 1/4"	3 1/2" CALL	• 5 1/4" Datalife
s-side 17 <sup>95</sup>	s-side 22 <sup>95</sup>	s-side 19 <sup>95</sup>	s-side 18 <sup>95</sup>
d-side 23 <sup>95</sup>	d-side 30 <sup>50</sup>	d-side 25 <sup>95</sup>	d-side 24 <sup>95</sup>
d-side 27 <sup>50</sup>	d-side 34 <sup>50</sup>	d-side 28 <sup>95</sup>	d-side 30 <sup>95</sup>
s-side quad 33 <sup>95</sup>	d-side quad 45 <sup>50</sup>	s-side quad 36 <sup>95</sup>	d-side quad 39 <sup>95</sup>
• 8"	• 8"	• 8"	• 8" Datalife
s-side 21 <sup>50</sup>	s-side 28 <sup>50</sup>	s-side 31 <sup>95</sup>	s-side 24 <sup>75</sup>
s-side 26 <sup>00</sup>	s-side 30 <sup>95</sup>	d-side 34 <sup>95</sup>	s-side 26 <sup>95</sup>
d-side 31 <sup>50</sup>	d-side 34 <sup>95</sup>	d-side 34 <sup>95</sup>	d-side 31 <sup>95</sup>

3M	AMARAY MEDIA MATE	Head Cleaners
DC100A...13 <sup>95</sup>	(3 1/2"...11 <sup>95</sup> ) (5 1/4"...11 <sup>95</sup> )	Kits...520
DC300A...18 <sup>40</sup>	DISK MINDERS	Refills...955
DC300XL 20 <sup>25</sup>	(5 1/4"...16 <sup>75</sup> ) (8"...21 <sup>50</sup> )	Analizers 2500
DC600A...24 <sup>45</sup>	BULK PACKED DISKS "CALL"	

Diskettes 10/Box the Diskette Connection Dealer Inquiries Welcomed

1(800) 654-4058

OKLAHOMA & NEVADA  
UP's Delivery Only. Add 3% on orders under 35% or 20 disk.

**Applying The Atari**  
Continued from page 113  
that are set. If the two quantities are equal, the result of the subtraction is zero and the zero

flag is set. Thus, a BEQ or BNE instruction causes the computer to refer to the zero flag to determine whether or

not to branch.

What you need to be concerned with is the carry flag. When a larger quantity is compared to a smaller quantity, as in:

LDA #50  
CMP #100

the carry bit is cleared. This condition can therefore be checked with the BCC, or Branch if Carry Clear, operand. On the other hand, when a smaller quantity is compared to an equal or larger quantity, as in:

LDA #100  
CMP #50

or in:

LDA #100  
CMP #100

the carry bit is set, and the condition can be checked with the BCS, or Branch if Carry Set, operand. Since the computer

IF-THEN MACHINE LANGUAGE EQUIVALENTS			
BASIC		ASSEMBLY	
IF A>B THEN NUM (or IF B<A)	=	LDA BB CMP BA BCC NUM	
IF A<B THEN NUM (or IF B>A)	=	LDA BA CMP BB BCS NUM	

Figure 1

performs its own subtraction when comparing two quantities, these same carry flag rules apply when subtracting one quantity from another. Figure 1 gives sample IF-THEN statements and their assembly language equivalents.

### DOS 3

I finally received DOS 3 from Atari a few weeks ago and will be answering questions about it in the future. I purchased my 1050 drive months before DOS 3 was released and have been waiting for it ever since. Those of you who have a 1050 drive but do not have DOS 3, you're entitled to it. I managed to discover Atari's customer relations address, so write to them, tell them your drive's serial number, and ask for a copy:

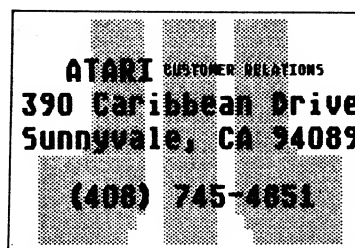


Figure 2

Regarding DOS 3, many have questioned as to whether a DOS 3 disk can be converted to DOS 2. While it is possible

to convert DOS 2 files into DOS 3 files (by selecting the ACCESS DOS 2 function), as of yet I know of no program to do the opposite. However, I see no reason why such a program cannot be produced. If any readers know of such a program or have developed one, tell us about it. Meanwhile, here is a simple solution for those of you who are reluctant to permanently "DOS 3" a program: Use DOS 3 to create your programs. When you want to change a DOS 3 program to a DOS 2 one, save the program to cassette. Then turn off the computer, boot up with DOS 2 and load the program from cassette. You can then save it on the DOS 2 disk. Let's hope a faster solution is available soon.

### Banner Program Mystery

For those of you who have been wondering how January's 17-line banner program produces its characters, the mystery is hereupon solved. Observant individuals will have noticed that the characters look remarkably similar to those which appear on your Atari's screen. The reason is that the banner program actually uses the character data

Continued on page 116

## Your floppy disk should be a BASF Flexydisk®

5 1/4"	SINGLE SIDE DOUBLE DENSITY SOFT SECTOR	\$1 39
5 1/4"	DOUBLE SIDE DOUBLE DENSITY SOFT SECTOR	\$1 89
SOLD IN BOXES OF TEN ONLY		
3 1/2"	SINGLE SIDE	\$3 59
SOLD IN BOXES OF FIVE ONLY		

**tremendous selection of software books, accessories and supplies**  
UP TO **50% OFF!**

ABC DATA CASSETTES  
8 Cassettes, C-10 Sonic and Library Album for only **7.95**

SINGLE DISK  
HEAD CLEANING  
MINI KIT  
Wet or Dry **9.95**

Minimum shipping and handling \$2.00. California residents add 6% sales tax. Prices subject to change without notice. Write for our free catalog.

## ABC data products

3311 ADAMS AVE, SAN DIEGO, CA 92116  
**619-283-5488** **800-854-1555**

# SIGNALMAN MODEMS

Additional Discounts  
On Multiple Purchases!!

We Service  
What We Sell!!  
No Hidden Costs!

Have questions? Give us a call!!  
Our technicians will be happy to respond in full!

**SIGNALMAN MARK XII** - 300-1200 baud Hayes Compatible smartmodem, auto dial/auto answer, direct-connect, with RS-232 cable, 12 volt power supply, and 2 year warranty. Retail \$399, your cost only **\$239.95!**

**SIGNALMAN MARK X** - 300 baud, Hayes compatible smartmodem, auto-dial/auto-answer, direct-connect, with RS-232 cable, 9 volt power supply and 2 year warranty. Retail \$169.95, your cost only **\$149.95!**

**SIGNALMAN MARK VII** - 300 baud, auto-dial/auto-answer, direct-connect, with RS-232 cable, 9 volt power supply and a 1 year warranty. Retail \$159.95, your cost only **\$89.95!**

**SIGNALMAN VOLKSMODEM** - 300 baud, answer/originate, direct-connect, with lifetime limited warranty and membership to "The Source". Retail \$79.95, your cost only **\$59.95!**

**WESTRIDGE 6420** - direct connect modem for Commodore 64/Vic 20, with software. 300 baud/auto dial, auto answer and redial. Retail \$99, your cost only **\$69.95!**

CALL TODAY ■ **1-800-922-2329**  
TOLL FREE ■  
In Kansas Call: (316) 264-5068

**We Will Match Any Price Plus Provide Service!**

TERMS: C.O.D. acceptable. Personal Checks require two weeks for clearance. Visa and MasterCard accepted. All prices reflect 3% cash discount. Add 3% for shipping and handling. Kansas residents add 3% sales tax. All orders returned or refused are subject to a 10% restocking fee. Prices subject to change without notice.

**VOLKSMODEM 1200**

It's hard to believe there is a 0 to 300 and 1200 baud modem available at such a low price! We're excited to offer the new Volksmodem 1200...and we have them IN STOCK!!! This new Hayes compatible smartmodem comes with manual, 12 volt power supply, a 2-year warranty and a special offer from "The Source". Features include Bell 103/212A compatibility, serial command operation, full/half duplex, auto dial/auto answer, tone and pulse dialing, busy detection, status indicator lights, and more!!

**NOW ONLY: \$219.95**

440 Maple • Wichita, Kansas 67213

### Applying The Atari Continued from page 114

uses to plot its characters. Now, that's clever! More on this topic in upcoming months.

### Computer Assisted Study

Here's the program thousands of students across the country have been waiting for: A program designed to make studying more efficient and enjoyable. Teachers will

find this program equally useful for teaching and testing purposes. The three-letter codes preceding each program line are to be used with December's "Program Perfect," which checks for typing errors. If you do not have "Program Perfect" send me a SASE and request a listing.

This program is most effective with study material that can be arranged in question/answer form. Foreign

languages, vocabulary, social studies facts, math formulas, and the like work excellently. It might be necessary, especially when studying foreign languages, to substitute another character for one not existing on the keyboard. For example, the Spanish word for music is MUSICA, with an accent over the "U." It can be entered into this program as "MU'SICA," with an apostrophe following the "U."

After you type in the Computer Assisted Study program, RUN it. A menu will be displayed with the following options:

ENTER NEW DATA  
SAVE  
LOAD  
TEST  
ADD DATA  
CHANGE DATA  
DISPLAY DATA  
Enter New Data

When you first RUN this program, you will want to enter some study material. Press the "E" key. You are asked to enter question #1, and then answer #1. Enter a question you want to be asked when you are being tested. If you are entering a vocabulary list, you can just enter one of your vocabulary words. Press RETURN and then enter the answer. If you had typed in a vocabulary word as a question, then you would enter the definition as the answer.

Continue entering questions and answers until you reach a desired number of questions. You may enter up to 100 questions and answers, depending upon the amount of memory your Atari has. A 16K Atari will allow about 21 questions and answers. It is recommended that you test yourself on less than 30 at a time for the best effectiveness. After the last question and answer is entered, enter an asterisk "\*" for the "QUESTION" prompt. This returns you to the menu.

Save

After you enter your study data, you can save it on a cassette or diskette. Press the "S" key to select the save option. When asked, specify

Continued on page 117



## POCKET COMPUTERS

PC1250A PC1500A PC1350 PC1261 EL5510

Retail and Wholesale

- Complete Line Stocked — including all accessories
- Exclusive Software and Equipment — also available
- Quick Response — Most shipments made in one day!
- Application Development — expert assistance given
- EPROM's (PC1500/A) Burned — 8K and 16K

### CES SHOW SPECIAL

ROMWARE Libraries for the PC1500/A and Radio Shack PC2  
CE501A to CE507A — \$60 List ..... \$25 EACH!

Ask for our latest price list:

**Atlantic Northeast Marketing, Inc.**

P.O. Box 921, Marblehead, MA 01945

617-745-7707

## BODEX CORP.

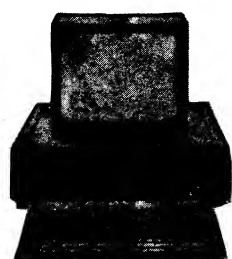
224 East Main St. Marlboro Mass. 01752 Phone: 1-617-485-5115

HOURS: M-F 10 - 9  
SAT 9:30 - 6  
WE CAN SHIP  
C.O.D. U.P.S. ONLY  
\$5.00 EXTRA

ALL EQUIPMENT 100%  
FROM TANDY CORP.  
ASK ABOUT OUR LEMON GUARANTEE



• PURE RADIO SHACK EQUIPMENT •



REVOLUTIONARY TANDY  
TRS-80 MODEL 2000  
The Ultra-High Performance  
MS-DOS Personal Computer  
That's Twice the Speed  
of the IBM PC.

128K ..... \$2199.00  
10 MEG Harddisk ..... \$3359.00

Green Monitor ..... \$176.00  
Color Monitor ..... \$549.00  
Mono Hi-Res Graphics ..... \$330.00  
Chip Kit ..... \$150.00

### TANDY NEW IBM COMPATIBLES

TANDY 1000

**\$979**

128K

TANDY 1200

**\$2399**

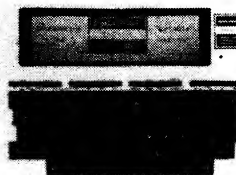
256K  
10 MEG. H.D.

ACCESSORIES AVAILABLE

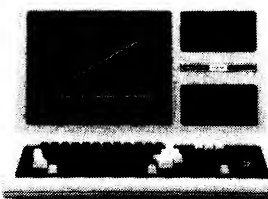
### MODEL 100

8K ..... \$349.00  
16K ..... \$549.00

While They Last



### EVERYTHING AT DISCOUNT PRICES



### MODEL IV

NEW GREEN SCREEN  
NEW KEYBOARD

64K **\$959<sup>00</sup>**  
R5232

ADD \$100 FOR 128K

### COLOR COMPUTER



16K ..... \$89  
16K Ext ..... \$125  
64K Ext ..... \$180

WHILE  
THEY  
LAST!

### MODEL 4P

NEW GREEN  
SCREEN 64K

WHILE  
THEY  
LAST!

**\$850**

Modem Board \$120.00

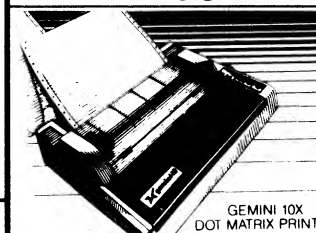
Add 100.00 For 128K

## PRINTERS



DMP 105 ..... \$165  
DMP 110 ..... \$225  
DMP 120 ..... \$379  
DMP 200 ..... \$499 DMP 210 ..... \$459

### ALL SOFTWARE 20% OFF



### GEMINI

10X ..... \$265  
15X ..... \$389

GEMINI 10X  
DOT MATRIX PRINTER

## OKIDATA

92P ..... \$369  
93P ..... \$570  
82 ..... \$309  
84P ..... \$699

ALL PRICES ARE SUBJECT TO CHANGE  
TRS 80 is a trademark of Tandy Corporation



## Applying The Atari

Continued from page 116  
cassette or disk, and if using a disk, enter a file name. The data you entered previously is saved, and you are returned to the menu.

### Load From Cassette/Disk

Whenever you wish to load a previously saved file, press "L." You can save files on all your subjects, and recall them at the end of the year to study for finals! As with the "Save" option, you must specify cassette or disk. If you are loading from disk, enter the name of the file you wish to load. When the file is loaded completely, you are returned to the main menu.

### Test

After you enter your study material, press the "T" key. Now you will begin to study. One question is selected at a time from all that you entered. The questions are given in a random order; not in the order in which they were entered. You simply enter the correct answer to each question. If you answer correctly, the computer will print "CORRECT" and will continue with the next word. If, however, you do not enter the right answer, the computer will print "INCORRECT."

**CORRECT ANSWER:** followed by the answer you should have typed. One powerful feature of this program is that it will give you an incorrectly answered question again at a later time in the testing period. The question will continue to be given until it is correctly answered, thus impressing the answer in your mind. You are not additionally penalized, however, for getting the same question wrong more than once (to prevent negative scores). When all questions are correctly answered, a score is given. The score is the percentage of the number of questions answered correctly the first time given out of the total number of questions. The score allows you to see your progress and to determine how much more studying you need. A score above 90 is given an "EXCELLENT SCORE" reward. After the test is over, you are asked if you wish to take it again. You should continue re-

taking the test until you get a satisfying score.

### Add Data

Press "A" on the menu screen when you want to add more questions and answers to the ones already in memory. Enter an asterisk when you finish entering the data.

### Change Data

Press "C" when you wish to change a question or answer in memory. Enter the number of the question/answer that you wish to change. If you want to change the question, enter a "Y" for the "DO YOU WANT TO CHANGE THIS" prompt. To change the answer, enter

an "N" for the first prompt, and a "Y" for the second. After a question/answer is changed, you are asked if you wish to make more changes. Enter "Y" to make more changes or "N" to return to the menu.

### Display Data

Press "D" to see the data that is currently in memory. Each question and answer is displayed with its corresponding number. You can use this option to make sure the correct data was loaded from cassette or diskette, and to check for errors after material has been entered.

### Final Notes

A good rule of thumb is to study the same material over a period of days. Of course, the more you try to study at once, the less effective your studying becomes.

"Isn't it cheating?" concerned parents and teachers might ask. No. Studying by computer is simply another alternative for a student. The material is actually learned, but can be done so in a shorter period of time due to an interest in studying with a computer.

Good luck with Computer Assisted Study. After using it,

you might discover that studying does not have to be such a tedious, boring task.

### Next Month

We'll have a software alarm clock, more reader mail and some surprises. Stay tuned.

Readers' questions, comments and contributions are welcome.

Address all correspondence to:

Jeff Brenner's  
"Applying the Atari"  
c/o Computer Shopper  
P.O. Box F  
Titusville, FL 32781

```

100 REM COMPUTER ASSISTED STUDY
110 REM BY JEFF BRENNER
120 N1=1:N2=N1+1:N3=N2+N1:N4=N3+N2:N5=N4+N3:N6=N5+N4:N7=N6+N5:N8=N7+N6:N9=N8+N7:N10=N9+N8:N11=N10+N9:N12=N11+N10:N13=N12+N11:N14=N13+N12:N15=N14+N13:N16=N15+N14:N17=N16+N15:N18=N17+N16:N19=N18+N17:N20=N19+N18:N21=N20+N19:N22=N21+N20:N23=N22+N21:N24=N23+N22:N25=N24+N23:N26=N25+N24:N27=N26+N25:N28=N27+N26:N29=N28+N27:N30=N29+N28:N31=N30+N29:N32=N31+N30:N33=N32+N31:N34=N33+N32:N35=N34+N33:N36=N35+N34:N37=N36+N35:N38=N37+N36:N39=N38+N37:N40=N39+N38:N41=N40+N39:N42=N41+N40:N43=N42+N41:N44=N43+N42:N45=N44+N43:N46=N45+N44:N47=N46+N45:N48=N47+N46:N49=N48+N47:N50=N49+N48:N51=N50+N49:N52=N51+N50:N53=N52+N51:N54=N53+N52:N55=N54+N53:N56=N55+N54:N57=N56+N55:N58=N57+N56:N59=N58+N57:N60=N59+N58:N61=N60+N59:N62=N61+N60:N63=N62+N61:N64=N63+N62:N65=N64+N63:N66=N65+N64:N67=N66+N65:N68=N67+N66:N69=N68+N67:N70=N69+N68:N71=N70+N69:N72=N71+N70:N73=N72+N71:N74=N73+N72:N75=N74+N73:N76=N75+N74:N77=N76+N75:N78=N77+N76:N79=N78+N77:N80=N79+N78:N81=N80+N79:N82=N81+N80:N83=N82+N81:N84=N83+N82:N85=N84+N83:N86=N85+N84:N87=N86+N85:N88=N87+N86:N89=N88+N87:N90=N89+N88:N91=N90+N89:N92=N91+N90:N93=N92+N91:N94=N93+N92:N95=N94+N93:N96=N95+N94:N97=N96+N95:N98=N97+N96:N99=N98+N97:N100=N99+N98:N101=N100+N99:N102=N101+N100:N103=N102+N101:N104=N103+N102:N105=N104+N103:N106=N105+N104:N107=N106+N105:N108=N107+N106:N109=N108+N107:N110=N109+N108:N111=N110+N109:N112=N111+N110:N113=N112+N111:N114=N113+N112:N115=N114+N113:N116=N115+N114:N117=N116+N115:N118=N117+N116:N119=N118+N117:N120=N119+N118:N121=N120+N119:N122=N121+N120:N123=N122+N121:N124=N123+N122:N125=N124+N123:N126=N125+N124:N127=N126+N125:N128=N127+N126:N129=N128+N127:N130=N129+N128:N131=N130+N129:N132=N131+N130:N133=N132+N131:N134=N133+N132:N135=N134+N133:N136=N135+N134:N137=N136+N135:N138=N137+N136:N139=N138+N137:N140=N139+N138:N141=N140+N139:N142=N141+N140:N143=N142+N141:N144=N143+N142:N145=N144+N143:N146=N145+N144:N147=N146+N145:N148=N147+N146:N149=N148+N147:N150=N149+N148:N151=N150+N149:N152=N151+N150:N153=N152+N151:N154=N153+N152:N155=N154+N153:N156=N155+N154:N157=N156+N155:N158=N157+N156:N159=N158+N157:N160=N159+N158:N161=N160+N159:N162=N161+N160:N163=N162+N161:N164=N163+N162:N165=N164+N163:N166=N165+N164:N167=N166+N165:N168=N167+N166:N169=N168+N167:N170=N169+N168:N171=N170+N169:N172=N171+N170:N173=N172+N171:N174=N173+N172:N175=N174+N173:N176=N175+N174:N177=N176+N175:N178=N177+N176:N179=N178+N177:N180=N179+N178:N181=N180+N179:N182=N181+N180:N183=N182+N181:N184=N183+N182:N185=N184+N183:N186=N185+N184:N187=N186+N185:N188=N187+N186:N189=N188+N187:N190=N189+N188:N191=N190+N189:N192=N191+N190:N193=N192+N191:N194=N193+N192:N195=N194+N193:N196=N195+N194:N197=N196+N195:N198=N197+N196:N199=N198+N197:N200=N199+N198:N201=N200+N199:N202=N201+N200:N203=N202+N201:N204=N203+N202:N205=N204+N203:N206=N205+N204:N207=N206+N205:N208=N207+N206:N209=N208+N207:N210=N209+N208:N211=N210+N209:N212=N211+N210:N213=N212+N211:N214=N213+N212:N215=N214+N213:N216=N215+N214:N217=N216+N215:N218=N217+N216:N219=N218+N217:N220=N219+N218:N221=N220+N219:N222=N221+N220:N223=N222+N221:N224=N223+N222:N225=N224+N223:N226=N225+N224:N227=N226+N225:N228=N227+N226:N229=N228+N227:N230=N229+N228:N231=N230+N229:N232=N231+N230:N233=N232+N231:N234=N233+N232:N235=N234+N233:N236=N235+N234:N237=N236+N235:N238=N237+N236:N239=N238+N237:N240=N239+N238:N241=N240+N239:N242=N241+N240:N243=N242+N241:N244=N243+N242:N245=N244+N243:N246=N245+N244:N247=N246+N245:N248=N247+N246:N249=N248+N247:N250=N249+N248:N251=N250+N249:N252=N251+N250:N253=N252+N251:N254=N253+N252:N255=N254+N253:N256=N255+N254:N257=N256+N255:N258=N257+N256:N259=N258+N257:N260=N259+N258:N261=N260+N259:N262=N261+N260:N263=N262+N261:N264=N263+N262:N265=N264+N263:N266=N265+N264:N267=N266+N265:N268=N267+N266:N269=N268+N267:N270=N269+N268:N271=N270+N269:N272=N271+N270:N273=N272+N271:N274=N273+N272:N275=N274+N273:N276=N275+N274:N277=N276+N275:N278=N277+N276:N279=N278+N277:N280=N279+N278:N281=N280+N279:N282=N281+N280:N283=N282+N281:N284=N283+N282:N285=N284+N283:N286=N285+N284:N287=N286+N285:N288=N287+N286:N289=N288+N287:N290=N289+N288:N291=N290+N289:N292=N291+N290:N293=N292+N291:N294=N293+N292:N295=N294+N293:N296=N295+N294:N297=N296+N295:N298=N297+N296:N299=N298+N297:N300=N299+N298:N301=N300+N299:N302=N301+N300:N303=N302+N301:N304=N303+N302:N305=N304+N303:N306=N305+N304:N307=N306+N305:N308=N307+N306:N309=N308+N307:N310=N309+N308:N311=N310+N309:N312=N311+N310:N313=N312+N311:N314=N313+N312:N315=N314+N313:N316=N315+N314:N317=N316+N315:N318=N317+N316:N319=N318+N317:N320=N319+N318:N321=N320+N319:N322=N321+N320:N323=N322+N321:N324=N323+N322:N325=N324+N323:N326=N325+N324:N327=N326+N325:N328=N327+N326:N329=N328+N327:N330=N329+N328:N331=N330+N329:N332=N331+N330:N333=N332+N331:N334=N333+N332:N335=N334+N333:N336=N335+N334:N337=N336+N335:N338=N337+N336:N339=N338+N337:N340=N339+N338:N341=N340+N339:N342=N341+N340:N343=N342+N341:N344=N343+N342:N345=N344+N343:N346=N345+N344:N347=N346+N345:N348=N347+N346:N349=N348+N347:N350=N349+N348:N351=N350+N349:N352=N351+N350:N353=N352+N351:N354=N353+N352:N355=N354+N353:N356=N355+N354:N357=N356+N355:N358=N357+N356:N359=N358+N357:N360=N359+N358:N361=N360+N359:N362=N361+N360:N363=N362+N361:N364=N363+N362:N365=N364+N363:N366=N365+N364:N367=N366+N365:N368=N367+N366:N369=N368+N367:N370=N369+N368:N371=N370+N369:N372=N371+N370:N373=N372+N371:N374=N373+N372:N375=N374+N373:N376=N375+N374:N377=N376+N375:N378=N377+N376:N379=N378+N377:N380=N379+N378:N381=N380+N379:N382=N381+N380:N383=N382+N381:N384=N383+N382:N385=N384+N383:N386=N385+N384:N387=N386+N385:N388=N387+N386:N389=N388+N387:N390=N389+N388:N391=N390+N389:N392=N391+N390:N393=N392+N391:N394=N393+N392:N395=N394+N393:N396=N395+N394:N397=N396+N395:N398=N397+N396:N399=N398+N397:N400=N399+N398:N401=N400+N399:N402=N401+N400:N403=N402+N401:N404=N403+N402:N405=N404+N403:N406=N405+N404:N407=N406+N405:N408=N407+N406:N409=N408+N407:N410=N409+N408:N411=N410+N409:N412=N411+N410:N413=N412+N411:N414=N413+N412:N415=N414+N413:N416=N415+N414:N417=N416+N415:N418=N417+N416:N419=N418+N417:N420=N419+N418:N421=N420+N419:N422=N421+N420:N423=N422+N421:N424=N423+N422:N425=N424+N423:N426=N425+N424:N427=N426+N425:N428=N427+N426:N429=N428+N427:N430=N429+N428:N431=N430+N429:N432=N431+N430:N433=N432+N431:N434=N433+N432:N435=N434+N433:N436=N435+N434:N437=N436+N435:N438=N437+N436:N439=N438+N437:N440=N439+N438:N441=N440+N439:N442=N441+N440:N443=N442+N441:N444=N443+N442:N445=N444+N443:N446=N445+N444:N447=N446+N445:N448=N447+N446:N449=N448+N447:N450=N449+N448:N451=N450+N449:N452=N451+N450:N453=N452+N451:N454=N453+N452:N455=N454+N453:N456=N455+N454:N457=N456+N455:N458=N457+N456:N459=N458+N457:N460=N459+N458:N461=N460+N459:N462=N461+N460:N463=N462+N461:N464=N463+N462:N465=N464+N463:N466=N465+N464:N467=N466+N465:N468=N467+N466:N469=N468+N467:N470=N469+N468:N471=N470+N469:N472=N471+N470:N473=N472+N471:N474=N473+N472:N475=N474+N473:N476=N475+N474:N477=N476+N475:N478=N477+N476:N479=N478+N477:N480=N479+N478:N481=N480+N479:N482=N481+N480:N483=N482+N481:N484=N483+N482:N485=N484+N483:N486=N485+N484:N487=N486+N485:N488=N487+N486:N489=N488+N487:N490=N489+N488:N491=N490+N489:N492=N491+N490:N493=N492+N491:N494=N493+N492:N495=N494+N493:N496=N495+N494:N497=N496+N495:N498=N497+N496:N499=N498+N497:N500=N499+N498:N501=N500+N499:N502=N501+N500:N503=N502+N501:N504=N503+N502:N505=N504+N503:N506=N505+N504:N507=N506+N505:N508=N507+N506:N509=N508+N507:N510=N509+N508:N511=N510+N509:N512=N511+N510:N513=N512+N511:N514=N513+N512:N515=N514+N513:N516=N515+N514:N517=N516+N515:N518=N517+N516:N519=N518+N517:N520=N519+N518:N521=N520+N519:N522=N521+N520:N523=N522+N521:N524=N523+N522:N525=N524+N523:N526=N525+N524:N527=N526+N525:N528=N527+N526:N529=N528+N527:N530=N529+N528:N531=N530+N529:N532=N531+N530:N533=N532+N531:N534=N533+N532:N535=N534+N533:N536=N535+N534:N537=N536+N535:N538=N537+N536:N539=N538+N537:N540=N539+N538:N541=N540+N539:N542=N541+N540:N543=N542+N541:N544=N543+N542:N545=N544+N543:N546=N545+N544:N547=N546+N545:N548=N547+N546:N549=N548+N547:N550=N549+N548:N551=N550+N549:N552=N551+N550:N553=N552+N551:N554=N553+N552:N555=N554+N553:N556=N555+N554:N557=N556+N555:N558=N557+N556:N559=N558+N557:N560=N559+N558:N561=N560+N559:N562=N561+N560:N563=N562+N561:N564=N563+N562:N565=N564+N563:N566=N565+N564:N567=N566+N565:N568=N567+N566:N569=N568+N567:N570=N569+N568:N571=N570+N569:N572=N571+N570:N573=N572+N571:N574=N573+N572:N575=N574+N573:N576=N575+N574:N577=N576+N575:N578=N577+N576:N579=N578+N577:N580=N579+N578:N581=N580+N579:N582=N581+N580:N583=N582+N581:N584=N583+N582:N585=N584+N583:N586=N585+N584:N587=N586+N585:N588=N587+N586:N589=N588+N587:N590=N589+N588:N591=N590+N589:N592=N591+N590:N593=N592+N591:N594=N593+N592:N595=N594+N593:N596=N595+N594:N597=N596+N595:N598=N597+N596:N599=N598+N597:N600=N599+N598:N601=N600+N599:N602=N601+N600:N603=N602+N601:N604=N603+N602:N605=N604+N603:N606=N605+N604:N607=N606+N605:N608=N607+N606:N609=N608+N607:N610=N609+N608:N611=N610+N609:N612=N611+N610:N613=N612+N611:N614=N613+N612:N615=N614+N613:N616=N615+N614:N617=N616+N615:N618=N617+N616:N619=N618+N617:N620=N619+N618:N621=N620+N619:N622=N621+N620:N623=N622+N621:N624=N623+N622:N625=N624+N623:N626=N625+N624:N627=N626+N625:N628=N627+N626:N629=N628+N627:N630=N629+N628:N631=N630+N629:N632=N631+N630:N633=N632+N631:N634=N633+N632:N635=N634+N633:N636=N635+N634:N637=N636+N635:N638=N637+N636:N639=N638+N637:N640=N639+N638:N641=N640+N639:N642=N641+N640:N643=N642+N641:N644=N643+N642:N645=N644+N643:N646=N645+N644:N647=N646+N645:N648=N647+N646:N649=N648+N647:N650=N649+N648:N651=N650+N649:N652=N651+N650:N653=N652+N651:N654=N653+N652:N655=N654+N653:N656=N655+N654:N657=N656+N655:N658=N657+N656:N659=N658+N657:N660=N659+N658:N661=N660+N659:N662=N661+N660:N663=N662+N661:N664=N663+N662:N665=N664+N663:N666=N665+N664:N667=N666+N665:N668=N667+N666:N669=N668+N667:N670=N669+N668:N671=N670+N669:N672=N671+N670:N673=N672+N671:N674=N673+N672:N675=N674+N673:N676=N675+N674:N677=N676+N675:N678=N677+N676:N679=N678+N677:N680=N679+N678:N681=N680+N679:N682=N681+N680:N683=N682+N681:N684=N683+N682:N685=N684+N683:N686=N685+N684:N687=N686+N685:N688=N687+N686:N689=N688+N687:N690=N689+N688:N691=N690+N689:N692=N691+N690:N693=N692+N691:N694=N693+N692:N695=N694+N693:N696=N695+N694:N697=N696+N695:N698=N697+N696:N699=N698+N697:N700=N699+N698:N701=N700+N699:N702=N701+N700:N703=N702+N701:N704=N703+N702:N705=N704+N703:N706=N705+N704:N707=N706+N705:N708=N707+N706:N709=N708+N707:N710=N709+N708:N711=N710+N709:N712=N711+N710:N713=N712+N711:N714=N713+N712:N715=N714+N713:N716=N715+N714:N717=N716+N715:N718=N717+N716:N719=N718+N717:N720=N719+N718:N721=N720+N719:N722=N721+N720:N723=N722+N721:N724=N723+N722:N725=N724+N723:N726=N725+N724:N727=N726+N725:N728=N727+N726:N729=N728+N727:N730=N729+N728:N731=N730+N729:N732=N731+N730:N733=N732+N731:N734=N733+N732:N735=N734+N733:N736=N735+N734:N737=N736+N735:N738=N737+N736:N739=N738+N737:N740=N739+N738:N741=N740+N739:N742=N741+N740:N743=N742+N741:N744=N743+N742:N745=N744+N743:N746=N745+N744:N747=N746+N745:N748=N747+N746:N749=N748+N747:N750=N749+N748:N751=N750+N749:N752=N751+N750:N753=N752+N751:N754=N753+N752:N755=N754+N753:N756=N755+N754:N757=N756+N755:N758=N757+N756:N759=N758+N757:N760=N759+N758:N761=N760+N759:N762=N761+N760:N763=N762+N761:N764=N763+N762:N765=N764+N763:N766=N765+N764:N767=N766+N765:N768=N767+N766:N769=N768+N767:N770=N769+N768:N771=N770+N769:N772=N771+N770:N773=N772+N771:N774=N773+N772:N775=N774+N773:N776=N775+N774:N777=N776+N775:N778=N777+N776:N779=N778+N777:N780=N779+N778:N781=N780+N779:N782=N781+N780:N783=N782+N781:N784=N783+N782:N785=N784+N783:N786=N785+N784:N787=N786+N785:N788=N787+N786:N789=N788+N787:N790=N789+N788:N791=N790+N789:N792=N791+N790:N793=N792+N791:N794=N793+N792:N795=N794+N793:N796=N795+N794:N797=N796+N795:N798=N797+N796:N799=N798+N797:N800=N799+N798:N801=N800+N799:N802=N801+N800:N803=N802+N801:N804=N803+N802:N805=N804+N803:N806=N805+N804:N807=N806+N805:N808=N807+N806:N809=N808+N807:N810=N809+N808:N811=N810+N809:N812=N811+N810:N813=N812+N811:N814=N813+N812:N815=N814+N813:N816=N815+N814:N817=N816+N815:N818=N817+N816:N819=N818+N817:N820=N819+N818:N821=N820+N819:N822=N821+N820:N823=N822+N821:N824=N823+N822:N825=N824+N823:N826=N825+N824:N827=N826+N825:N828=N827+N826:N829=N828+N827:N830=N829+N828:N831=N830+N829:N832=N831+N830:N833=N832+N831:N834=N833+N832:N835=N834+N833:N836=N835+N834:N837=N836+N835:N838=N837+N836:N839=N838+N837:N840=N839+N838:N841=N840+N839:N842=N841+N840:N843=N842+N841:N844=N843+N842:N845=N844+N843:N846=N845+N844:N847=N846+N845:N848=N847+N846:N849=N848+N847:N850=N849+N848:N851=N850+N849:N852=N851+N850:N853=N852+N851:N854=N853+N852:N855=N854+N853:N856=N855+N854:N857=N856+N855:N858=N857+N856:N859=N858+N857:N860=N859+N858:N861=N860+N859:N862=N861+N860:N863=N862+N861:N864=N863+N862:N865=N864+N863:N866=N865+N864:N867=N866+N865:N868=N867+N866:N869=N868+N867:N870=N869+N868:N871=N870+N869:N872=N871+N870:N873=N872+N871:N874=N873+N872:N875=N874+N873:N876=N875+N874:N877=N876+N875:N878=N877+N876:N879=N878+N877:N880=N879+N878:N881=N880+N879:N882=N881+N880:N883=N882+N881:N884=N883+N882:N885=N884+N883:N886=N885+N884:N887=N886+N885:N888=N887+N886:N889=N888+N887:N890=N889+N888:N891=N890+N889:N892=N891+N890:N893=N892+N891:N894=N893+N892:N895=N894+N893:N896=N895+N894:N897=N896+N895:N898=N897+N896:N899=N898+N897:N900=N899+N898:N901=N900+N899:N902=N901+N900:N903=N902+N901:N904=N903+N902:N905=N9
```

# Review: F-15 Strike Eagle

by Jeff Brenner

For Atari 400/800/XL with min. of 48K RAM.  
Also available for the Apple and Commodore 64  
Program author:

Sid Meier

Requirements:

One joystick

Additional joystick optional

Price:

Diskette—\$34.95

Warranty:

30-day free replacement

\$10 for replacement after 30 days

Manufacturer:

MicroProse Software

10616 Beaver Dam Road

Hunt Valley, MD 21030

301-667-1151

MicroProse Software's

newest release, F-15 Strike

Eagle, is an impressively

realistic air combat game that

puts you in the cockpit of the

"High-Tech, All Weather, Air Superiority and Ground Attack Fighter," America's F-15 jet. The game combines the animated graphics of a flight simulator, the excitement of combat weaponry and the program author's technical prowess to yield a truly captivating simulation—certainly the best work from MicroProse that I have seen to date.

## Skill Levels and Options

The initial screen is a menu which offers a range of skill levels and a variety of missions. The menu on the Atari version seems sloppily done—colors are thrown about here and there making it difficult to read the text. It's possibly an attempt to create an overwhelmingly colorful menu, but the whole thing looks messy. Luckily, this first screen is not indicative of the quality of the actual game.

Four skill levels are offered: Arcade, Rookie, Pilot and Ace. In the Rookie, Pilot and Ace levels, the maneuvering of the aircraft is authentically reproduced; to turn left, the entire aircraft rolls to the left. The Arcade level offers a more simplified method of control for those who might be confused by the rolling. This level offers direct left, right, up and down motions of the craft corresponding to the movement of the joystick. The other levels offer more progressively difficult games.

One of several missions can also be chosen, each of which varies in the number of targets to be destroyed. The seven missions are situated in Libya, Egypt, Haiphong, Syria, Hanoi, Iraq and the Persian Gulf. Each mission has its own scenario, described in the in-

Continued on page 120



F-15 Strike Eagle

## MICRO ENTERPRISES

5033 N. Park Ave.  
Warren, OH 44481

### COMPUTERS:

Sanyo—MBC-555	\$ 899
MBC-555-2	1049
Columbia	Call Us
Panasonic	Call Us
Compaq	Call Us

### PRINTERS:

Okidata—ML82	\$ 299
92	402
93	642
84	840
Toshiba—1350/51	\$1295
1340	777
Silver Reed—400	\$ 289
500	345
550	480
770	858
NEC	Call Us

### MODEMS:

Hayes 300	\$ 205
Hayes 1200	399
Hayes 1200B	469

### MONITORS:

Taxan:	
HiRes Green	\$ 97
HiRes Amber	107
RGB Amber	299
RGB III	399
RGB 420 (IBM)	425

### IBM CARDS:

AST	Call Us
Hercules	Call Us
IDEA	Call Us

### DRIVES:

TEAC 55B	\$ 159
Tandon 100-2	180
CDC—CDC1800	199

### CABLES:

IBM Parallel	\$ 22
Standard Parallel	29

### DISKETTES:

BASF SS/DD	\$ 16
DS/DD	25
5-Pk. 3 1/2"	17
FUJI SS/DD	\$ 17
DS/DD	26

### DISKBANK

MasterCard/VISA accepted.

Add 4% to prices shown.

Ohio Residents

Add 5% State Sales Tax.

ORDER TOLL-FREE:

(800) 432-4105

In Ohio Call:

(216) 847-6969

Add 2% to total order

(\$2.50 min.) for shipping/handling.

## Single Board Computer

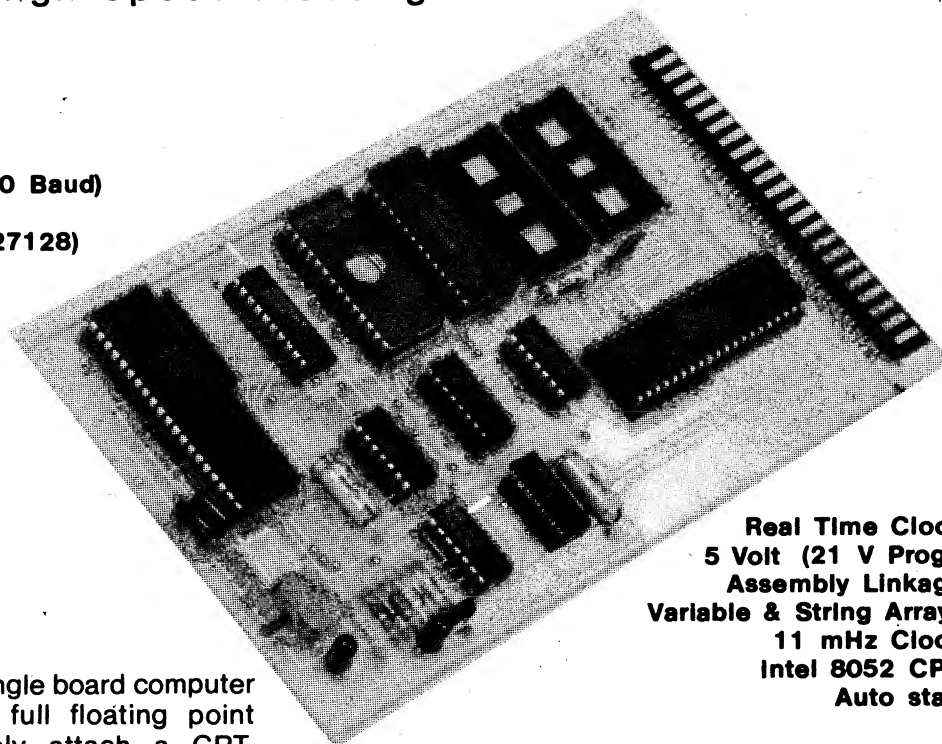
with High Speed Floating Point BASIC

8 Digit E ± 127  
24K Static RAM  
16K UvEPROM  
24 Bit Parallel Port (PPI)  
RS-232 Serial Port (50-9600 Baud)  
RS-232 Printer Port  
PROM Programmer (2764/27128)  
11 mHz Clock

### GA-8052

The GA-8052 is the first single board computer to offer a ROM based full floating point BASIC interpreter. Simply attach a CRT, connect 5 volts and you have yourself a powerful microcomputer that you can program. Burn a UvEPROM (2764/27128) for auto start when power is applied.

The GA-8052 is a full microcomputer development system and your target system all on a single 4 1/2" x 6" card. Sophisticated application designs can be implemented in hours instead of days or weeks because you have eliminated expensive and time consuming hardware software costs.



Real Time Clock  
5 Volt (21 V Prog.)  
Assembly Linkage  
Variable & String Arrays  
11 mHz Clock  
Intel 8052 CPU  
Auto start

The GA-8052 is a full feature single board computer with 24K RAM, 16K PROM, 24 line PPI, 2 RS-232 ports and a real time clock. Whether you are a first time computer user or manufacture industrial equipment the GA-8052 is a cost effective computer on the leading edge of technology.

GA-8052 (8K RAM, 8K PROM)	\$395.00
8K RAM kit (6264)	35.00
16K PROM (27128)	20.50
Edge connector (22/44)	8.00

## GLOBAL AUTOMATION

Div. of Key Telemetry Products

2829 Lewis Lane • Owensboro, KY 42301

(502) 683-9871

## F-15 Strike Eagle

Continued from page 118

struction booklet, in which you assume the role of either an American or an Israeli fighter. The booklet describes the situation, gives a suggested flight plan, and identifies potential threats. For example, in the Iraq simulation, it is June 7, 1981. An Iraqi nuclear reactor complex, which would be able to create nuclear weapons, is

being completed. The object is to destroy the reactor through a secret attack. The flight plan is given as follows:

- 1) Penetrate air defenses below 1500 feet to avoid radar detection.
- 2) Bomb the reactor.
- 3) Bomb any SAM sites or air bases that could endanger this or a follow-up mission.
- 4) Return to base.

You are also told to be

**Tell your friends about the bargains in Computer Shopper.**

# Seduction. . .

*more than a game!*



ATARI 400/800/1200 - 48K 1 DRIVE - REQUIRED  
TRS-80 MODEL I - 48K 2 DRIVE - TRSDOS 2.3  
TRS-80 MODEL III - 48K 1 DRIVE - TRSDOS 1.3  
TRS-80 MODEL 4P - 48K 1 DRIVE - TRSDOS 1.3  
SEDUCTION/1 AND SEDUCTION/2 \* - \$49.95  
SEDUCTION/2 MODEL III/4 AND 4P - \$39.95  
SEDUCTION/2 ATARI 400/800/1200 - \$34.95  
SEDUCTION/1 MODEL I/III/4 AND 4P - \$29.95  
MODELS III/4 AND 4P\*

XX-RATED versions - Order #X6501

**ADULT VIDEO GAMES™**

7325 1/2 Reseda Blvd.  
Suite 637, Dept. 8  
Reseda, Ca. 91335

**X-RATED**

prepared for Iraq's SA-2 and SA-3 radar homing and SA-7 heat seeking SAMs.

## Authentication Codes

Before you get to fly, you'll encounter the "Authentication Codes," one of the few reservations I have about this program. The computer will display something such as, "Authenticate (7)." You must then search through the instruction booklet for a small box entitled "TOP SECRET" which contains the parenthesized number and your brand of computer. This box will then tell you a letter to type for this prompt. If you enter the wrong number, you

can still fly the plane, but you won't have access to many of the flight and weapons systems. What does this mean? It means that each time you play this game, you must have the instruction booklet with you to look up the proper code, and you must have very good eyesight to see the small letters.

These codes were no doubt included to minimize piracy (you need the instruction booklet to know the codes to play the game) and they were printed in microscopic print as to render photocopying ineffective. I fully support copy-protection techniques, but not when they cause inconvenience to legitimate users. I'm sure many people who have pur-

chased this program will unknowingly be playing it without many of its features, either because the codes are too small to read, or because the whole code business is poorly described in the manual. I hope that MicroProse does not continue with this poorly devised protection scheme in their future programs.

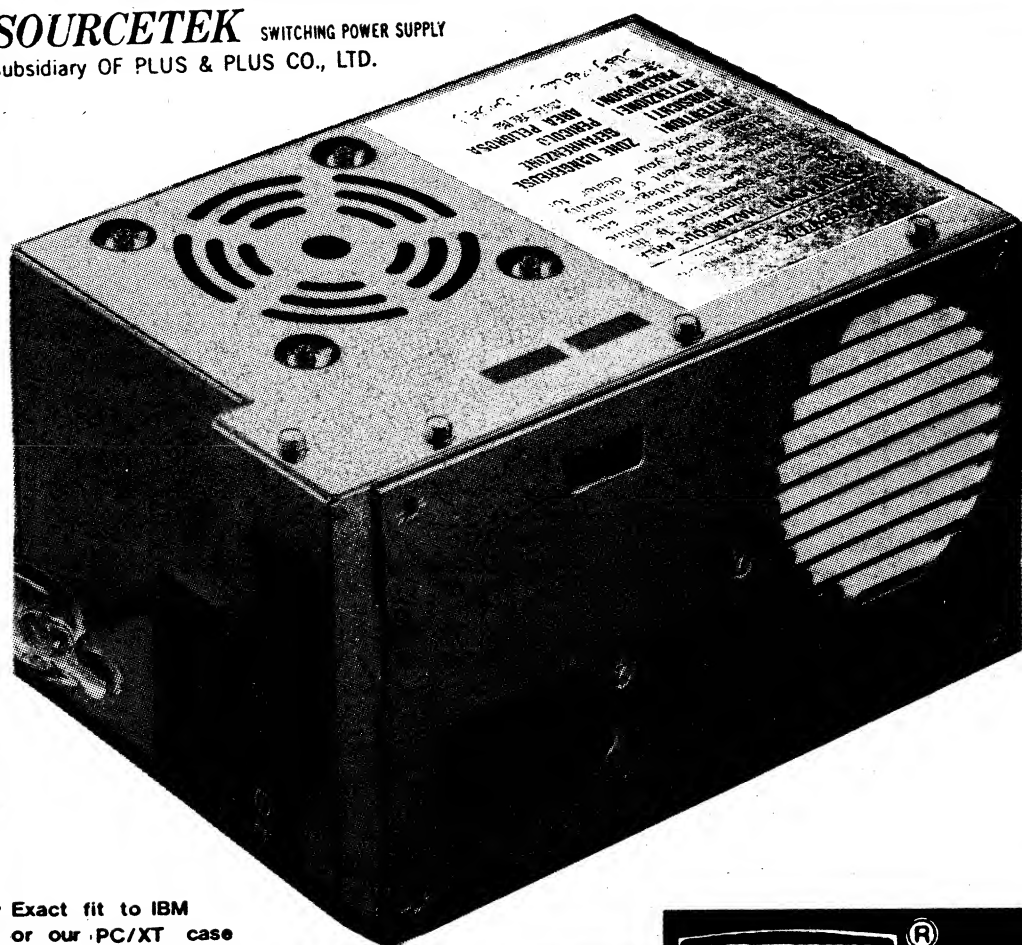
## The Heads-Up-Display

After you've chosen a skill level and mission and have looked up the authentication codes, the simulation begins. The well-designed display consists of four component screens.

**Continued on page 122**

```
*****
*****
***** DYSAN   DISKETTES *****
*****
*****
*
*      5 1/4" DOUBLE DENSITY          DYSAN P/N       10-40        50-90        100 -
* SINGLE SIDED SOFT SECTOR           104/1D         $2.47        $2.38        $2.28
* DOUBLE SIDED SOFT SECTOR           104/2D         $3.25        $3.13        $3.00
*
*      5 1/4" QUAD DENSITY            DYSAN P/N       10-40        50-90        100 -
* SINGLE SIDED SOFT SECTOR           204/1D         $3.77        $3.63        $3.48
* DOUBLE SIDED SOFT SECTOR           204/2D         $4.81        $4.63        $4.44
*
*      8 "    DOUBLE DENSITY           DYSAN P/N       10-40        50-90        100 -
* SINGLE SIDED SOFT SECTOR           3740/1D        $3.25        $3.13        $3.00
* DOUBLE SIDED SOFT SECTOR           3740/2D        $3.84        $3.69        $3.54
*
*****
* LIFE TIME WARRANTY                  * CONTROL SERVICE CORPORATION
* MASTER CHARGE, VISA OR CHECK ACCEPTED * JET BROOK ROAD
* PLEASE ALLOW 7 DAYS IF PAID BY CHECK   * NEWTOWN, CT 06470
* PURCHASE ORDERS ACCEPTED FROM RATED FIRMS *
* FREE SHIPPING ON ORDERS OVER $ 100.00 * (203) 426-1130
*****
```

**SOURCETEK** SWITCHING POWER SUPPLY  
Subsidiary OF PLUS & PLUS CO., LTD.



- Exact fit to IBM or our PC/XT case
- Same power connect as IBM PC/XT

**IPS-100(100W)**  
**for heavy duty PC**  
**IPS-135(135W)**

## IBM OR COMPATIBLE ADD-ON CARD

- **FDC- 500i** ----- **99.00**  
Disk Controller with Cable (A&T)
- **CGC- 640C** ----- **145.00**  
(Color Graphics Card)
- **SIC- 025i** ----- **60.00**  
(Serial Interface Card)
- **PPC- 025i** ----- **60.00**  
(Parallel Printer Card)
- **IPS- 100** ----- **120.00**  
Switching Power Supply with Fan
- **IPS- 135** ----- **160.00**  
Switching Power Supply with Fan

IBM Style Keyboard w/Cable .....	100.00
----------------------------------	--------

**Slimline Disk Drive (360K) D.S.D.D. . . . 129.00**

●DRAM		●8200	
4164.....	3.15	8284A.....	4.75
●EPROM		8288.....	14.50
2732.....	3.65	8253- 5.....	6.50
2764.....	5.65	8259A.....	5.25
●CPU		8237A- 5.....	12.50
8088.....	19.00	8255A- 5.....	8.65
8748.....	16.25	●OTHERS	
8749.....	18.75	74LS322.....	4.90

IBM IS A REGISTERED TRADEMARK OF I.B.M.

# DEALERS WANTED



1807S. SAN GABRIEL BLVD SAN GABRIEL, CA 91776  
TLX:299326 MITR UR TEL:(818)288-8422

# MICTRO (U.S.A.) INC



### F-15 Strike Eagle Continued from page 120

At the top, comprising one-half of the screen, is the Heads-Up-Display (HUD). The top of the HUD gives airspeed and altitude readings. An air-to-air reticle helps to aim guns and missiles for firing at airborne targets. An air-to-ground reticle appears on-screen when a bomb is to be launched for

aiming at ground sites. Various markers also appear on the display, such as a target designator box and a missile designator box, for tracking these objects. All messages are communicated through the HUD. Messages such as "MISSILE ARMED," "ENEMY PLANE HIT," or "ALERT:SAM LAUNCH" appear when the appropriate situations occur.

### Other Displays

The Horizontal Situation Display (HSD) is one of three smaller screens located below the HUD. The HSD consists of a map of the entire region over which you will be flying during the particular mission you have selected. Symbols on the map indicate your position and direction, the location of

primary targets, enemy airfields, SAM sites and your base. It all sounds nice, but the HSD is even more useful. Using the cursor keys, you can move a "navigation cursor" over the position you wish to reach on the map. Then, on the HUD, a repeating series of letters "N," "A," and "V" serve as a steering cue. By directing your craft towards the cue, you

will be flying in the direction of the desired location.

The Radar-Electronic Warfare Display (REWD) gives a radar view of the objects near your craft, such as missiles and enemy aircrafts. It also displays the various air targets. Included with the REWD are infrared and radar detectors which alert you to the presence of other ships or missiles.

The Weapons Status Display displays the complete inventory on-board the F-15. It lets you see how many bombs, missiles and flares remain.

### Graphics and Sound Effects

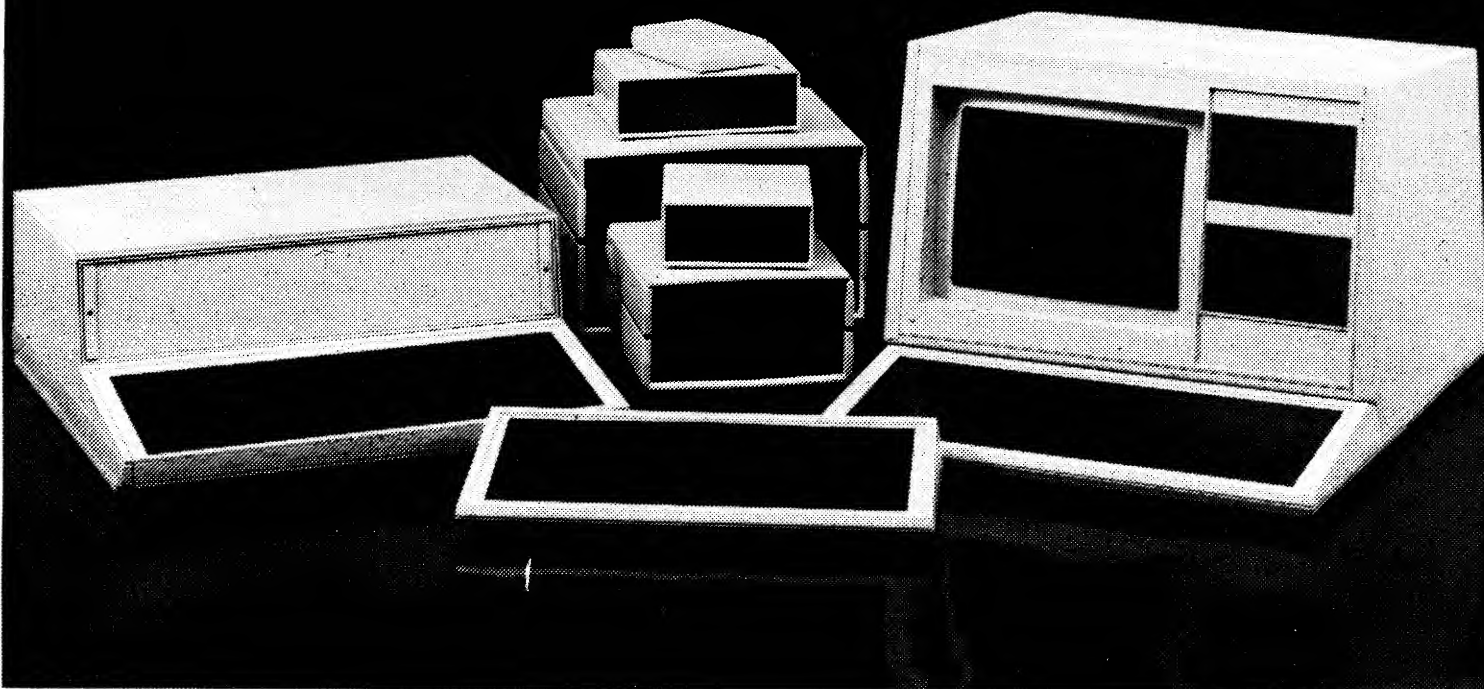
Overall, the graphics are well done and the sound effects of the motor and artillery fire are authentic. The view through the HUD gives a convincing feeling of flight—the entire scene tilts as the plane rolls, and the surface below changes from green to blue once you're over water. The author could have made the graphics even better by making a distinction among the land sites. As it is, the enemy airports, primary targets, SAM sites and home base all look the same.

### Controls

The joystick is used to control the general motion of the F-15 and to fire weapons. A second joystick can be used to control the throttle, speed brakes, afterburners and the weapons selector, although I find it more convenient to use the keyboard. The keyboard is also used to activate the gun and bomb modes, to select either short or medium range missiles, to release chaff as a

Continued on page 124

## Production-quality enclosures for your one-of-a-kind projects.



### The PacTec line of standard enclosures.

Now you can find the perfect enclosure for your CPU, CRT, keyboard, modem, power supply, disk drive... anything you're building. PacTec enclosure kits include all the parts, panels, and assembly hardware you need, plus the flexibility to fit your specific design. And PacTec enclosure kits fit your budget, too.

### Look at these selected enclosures.

Model		Height (in inches)	Width (in inches)	Depth (in inches)	Suggested Retail Price**
17" Keyboard	KE-17Kit*	2.79	17.08	8.68	\$27.55
20" Keyboard	KE-20Kit*	2.79	20.08	8.68	\$31.70
Modem	CM69-120Kit	1.50	6.33	9.50	\$14.20
Multi-purpose enclosure	CM86-225Kit	2.50	8.08	6.25	\$14.30
Multi-purpose enclosure	CM5-200Kit	2.25	5.08	5.25	\$11.25

\*UL rated 94V-0

\*\*Manufacturer's suggested retail single-unit price.  
Substantial quantity discounts available.

©PacTec

### General Specifications.

**Material:** ABS (flame-retardant material and EMI/RFI shielding available.)

**Color:** Standard—Light oak (other colors available)

### See the whole line at your local electronics distributor.

Or call Customer Service at 1-800-523-4813 (outside PA) for the PacTec distributor nearest you.

# PACITEC<sup>®</sup>

Subsidiary of LaFrance Corp.

Enterprise and Executive Avenues  
Philadelphia, PA 19153 U.S.A.  
Telephone: (215) 365-8400

**Distributor or OEM inquiries encouraged.  
Call Ken Hartman at 1-800-523-4813.**

### ATARI HARDWARE!!

810 Disk Drives \$265  
810 Drive Kits \$240  
810 Analog Upgrade,  
easy kit... \$37  
810 Happy \$185  
850 Interface \$180  
800 Computer Kits,  
48K electronics \$100  
400 Computer Kit \$47  
48K Expansion \$87  
800 Motherboard \$37  
400 Motherboard \$15  
ROM 'B' boards \$17  
'GTIA' CPU board \$18  
Power Adapters \$15  
16K Memory board \$19  
Microsoft Basic II \$27  
Conv. Spanish \$12.50  
Atari Pilot \$20  
Basic cart kit \$15  
Assembler kit \$15

We have many parts and IC chips!!  
MUCH, MUCH MORE!!  
FREE CATALOG!!

**CENTURIAN  
ENTERPRISES**

P.O. BOX 3233  
SAN LUIS OBISPO, CA  
93403-3233  
(805) 544-6616  
VISA & MC

Office Hrs: Mon-Thurs. 10-5

PAC-159



### F-15 Strike Eagle

Continued from page 122

radar jammer, to deploy flares to decoy heatseeking missiles, to drop the external fuel tanks when they are no longer needed and to change the radar range. A pause key is provided as well as a bail out key for desperate situations. If you bail out, you have a 50% chance of being rescued.

The simulation ends when you return to base. You are then given points for destroying SAM sites, enemy airports and planes. If you hit the primary target, your mission is a success and you get to tackle the next challenging mission.

#### Documentation

Even the 36-page document-

tation adds to the realism of this simulation. The booklet is entitled "Flight Operators Manual" with a "Technical Order No. 1-F-15E-1." Comprehensive descriptions of most of the features are included. Several pages are devoted to the technical analysis of the F-15, including sections on basic aerodynamics, turning performance, and the F-15's

performance envelope. Recommended offensive and defensive air combat maneuvers are discussed, as well as bombing techniques. Details are given on the various types of aircraft and SAMs to be encountered during the simulation. At the end of the manual, each of the missions is detailed and maps of the areas are shown.

There is a problem with the manual, though, in that perhaps too much of it is devoted to unnecessary technical details and combat theories at the expense of directions needed to actually play the game. As I said previously, the authentication codes are not made clear enough. An even more serious fault is the failure to describe how to land the F-15 at your base. If you can't bring your craft to base,

you can never complete a mission! I learned, through practice, that you must bring your F-15 in direct line with your base, and as close as possible to it. I don't know how MicroProse could have excluded this important piece of information.

In summary, F-15 Strike Eagle is challenging and thrilling. The attention to detail breeds realism, and the realism breeds excitement. This one was made to satisfy demanding players.

#### Ratings For F-15 Strike Eagle

\*Poor\*\*Fair\*\*\*Good\*\*\*\*Excellent

Program Design	***
Amusement Level	****
Documentation	***
Value	***
Average	***

## ELECTRO DISTRIBUTING

714-841-4971

### IBM PC

256Kb, Two 360Kb  
Disk Drives & Keyboard **\$1699**

### IBM PC w/10MB

256Kb w/one 360Kb  
Floppy & Keyboard **\$2399**

**COMPAQ** portable, 256k, 2 drives **CALL**

### PRINTERS

Epson:  
FX80.....\$479  
FX100.....\$640  
LQ1500.....CALL  
OTHER MODELS.....CALL  
Dynax DX15.....\$425  
Okidata.....CALL

All Models

### MONITORS

PGS  
HX12.....\$479  
300 G + A.....\$129  
AMDEK  
310 G & A.....\$169

### MODEMS

Hayes  
1200.....\$479  
1200b.....\$395  
Anchor  
Mark XII.....\$375  
Volks.....\$79

### HARD DRIVES

10MB Hard Disk w/5MB Removable Hard  
Disk "Internal Unit".....\$1799  
Maynard 10MB/30MB WS-1, WS-2 **CALL**

### SOFTWARE SPECIALS

Lotus 123.....\$309  
Wordstar Prof.....\$315  
D base III.....\$415  
Multimat.....\$279  
Frame Work.....\$415  
Symphony.....\$459

### CALL FOR CURRENT PRICES

### IBM PC w/30MB

256Kb w/One Floppy  
Keyboard & Power Supply **\$2950**

### FLOPPY DRIVES

Tandon 100-2.....\$175  
Teac 55B.....\$145

### MISC. ADD ONS

AST  
Six Pack.....\$259  
Mega Plus.....\$259  
Mono Graph.....\$379

STB  
Graphics Plus II.....\$325  
Rio Plus 64K.....\$259  
Quadboard (0-K to 384K)\$229  
Hercules Mono Graphics \$332

### SUPER SAVERS

Compaq w/10 MB 256 Kb.  
One Floppy.....\$2795  
64K RAM set of 9 chips\$35

### SPECIAL OF THE MONTH

10MB Hard Disk w/controller  
.....\$795

To Order: Send Check or  
Money Order to the following  
address. Allow 2 weeks for  
personal checks to clear.

## ELECTRO DISTRIBUTING

17301 Beach Blvd. #16A, Huntington Beach, CA 92647

### COLOR PRINTER RIBBONS

800-438-7745



Immediate Shipment    New Cartridges (not reloads)    Guaranteed First Quality

#### PRICE for Black Nylon

	3	6	12
C. Nash Prowriter 8500/8510*	\$16.85	\$30.70	\$55.40
NEC 8023-A, Apple DMP*	16.85	30.70	55.40
Dialble Hytype II*	13.80	24.60	43.20
Digital Decwriter IV, LA 34*	18.25	33.50	61.00
Epson MX 70/80, Apple Microcomputer*	16.40	29.80	53.60
Epson MX 100 Zip Pack, Black Only	18.00	33.00	60.00
Epson MX 100 Cartridge*	25.00	46.00	87.00
IBM Selectric 72*	14.70	23.40	40.00
NEC Spinwriter 5500/7700*	17.85	32.70	59.40
Radio Shack LP VI, VIII*	17.95	32.90	59.75

\* "COLORS" available are Red-Blue-Brown-Green at 30% additional.  
Feel free to mix them up.

Dialble Hytype II Multi-Strike	15.90	28.80	51.60
Colors	17.55	32.10	58.20
NEC Spinwriter 5500/7700 Multi-Strike	17.55	32.10	58.20
Colors	19.20	35.40	64.80
Ricoh 1300, 1600 Multi-Strike	17.15	31.30	56.60
Colors	18.65	34.30	62.60
Xerox 850/860 Multi-Strike	17.15	31.35	56.70
Colors	18.65	34.35	62.70

We have ribbons for most printers, call for prices and availability.

Prices include delivery (UP ground or Parcel Post) in Continental US

Checks & Money Orders accepted (no delay)

VISA/MC add \$1.00 per order.

COD add \$2.50 per order

Ga. residents add 3% sales tax

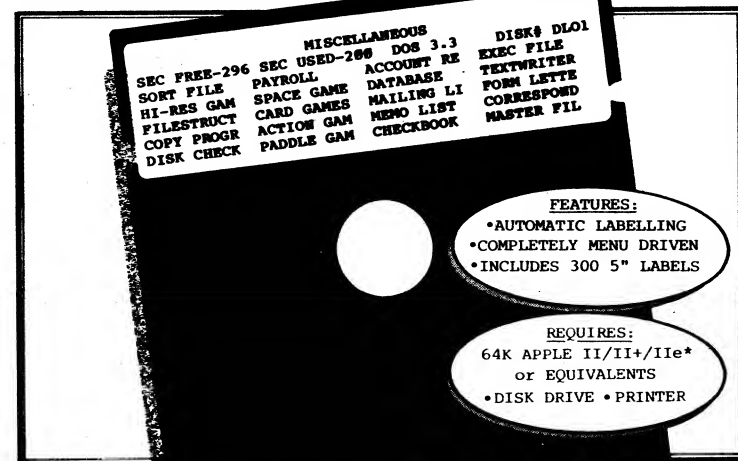
PRINTER RIBBON SUPPLY CO.

P.O. Box 920145

Norcross, Georgia 30092

In Ga. 404-445-1547

### LABEL YOUR DISKS WITH... The Disk Labeller



#### FEATURES:

- AUTOMATIC LABELLING
- COMPLETELY MENU DRIVEN
- INCLUDES 300 5" LABELS

#### REQUIRES:

- 64K APPLE II/II+/IIe\*
- OR EQUIVALENTS
- DISK DRIVE • PRINTER

SPECIAL PRICE  
\$59.95

SEND CHECK OR  
MONEY ORDER TO:

**PRACTICAL SOFTWARE LTD.**

P.O. Box 64 Dept. CS, Pomona, NY 10970

Phone: 914-425-1158

ADD \$3.00 SHIPPING & HANDLING  
N.Y. RESIDENTS ADD SALES TAX

\*APPLE II/II+/IIe ARE REGISTERED  
TRADEMARKS OF APPLE COMPUTER, INC.